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# MAINSTREAM INSTRUCTIONAL PERFORMANCE PATTERNS OF SPECIAL EDUCATION STUDENTS

George Behr

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Performance patterns in reading, mathematics, and composition of over 13,000 special education students in grades 1 through 6 are examined relative to mainstream performance patterns. The performance of special education students is slightly less than but mirrors mainstream performance patterns. The findings indicate that substantive mainstream instructional accomplishments need not be ruled out for handicapped students.

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MAINSTREAM INSTRUCTIONAL PERFORMANCE PATTERNS OF SPECIAL EDUCATION STUDENTS

George Behr

The schooling accomplishments of handicapped children are seldom examined relative to those of non-handicapped students. Perhaps this results from treating education for handicapped children as a special rather than an ordinary instructional matter. Or perhaps it reflects an implicit belief that the accomplishments of handicapped children will be different from those of non-handicapped children and that mainstream comparisons will be invidious rather than illuminating. Other reasons could be suggested why mainstreaming has not yet extended to examining instructional results or effects. However, it is beside the point of this paper to speculate further about what hasn't been, because the purpose of the paper is to present data that bear directly on the mainstream accomplishments of handicapped children.

## Method

The nine categories of special education students included in the study are listed in Table 1.

Table 1

Handicapping Conditions

| Category | Abbreviation |
|---|---|
| 1. Educationally Handicapped | EH |
| 2. Educable Mentally Retarded | EMR |
| 3. Autistic | AU |
| 4. Aphasic | AP |
| 5. Deaf/Hard of Hearing | DHH |
| 6. Orthopedic/Other Health Impaired | OHI |
| 7. Multihandicapped | MH |
| 8. Visually Handicapped | VH |
| 9. Resource Specialist Program | RSP |

The first eight categories are conventional special education classifications. Students receive special instruction consistent with each child's IEP. The instruction is provided in a special classroom or school setting for the majority of the school day. The Resource Specialist Program (RSP), Category 9, includes special education students who spend the majority of their instructional day with their age/grade peers. Thus, a typical 10 year old RSP student spends the majority of his/her classroom day in a 4th grade classroom. However, there is a resource teacher available to provide additional backup instruction and assistance for this student and his/her 4th grade classroom teacher. The type of instruction/assistance varies according to each child's IEP.

The students involved in the study are drawn from the urban, metropolitan area of Southern California. The study was conducted in collaboration with the local school administrators. The conduct of the study entailed no departures from standard district, school, or classroom practices.

The assessment instrumentation used in the study is the Survey of Essential Skills, SWRL: Grade-By-Grade Assessment and Advancement: Design, Development, and Verification of Implementation Resources and Procedures, 1981. The Survey pertains to skills in reading, mathematics, and written composition that are essential for grade-by-grade progress in elementary school (grades 1-6). The Survey is neither a minimum competency test nor a grade promotion test. It simply surveys the accomplishments attained in the instructional opportunities the students have experienced; it tests what students have been taught. Assessment

was conducted in 1982 by regular classroom teachers as part of general district practice to document learning accomplishments for the school year and to plan instruction for the following year.

Students in the eight categories other than RSP were assessed at their working grade as opposed to their nominal or age grade level. For example, a 10 year old EH student who would nominally be in 4th grade relative to his/her age may be working at 3rd grade reading and mathematics and 2nd grade composition. Consequently, this student would be assessed using the 3rd grade reading and mathematics surveys but the 2nd grade composition survey.

In contrast, all RSP students were assessed in the mainstream. That is, a 10 year old RSP student would take the grade 4 reading, mathematics, and composition assessment along with her/his 4th grade classmates.

Students classified as non-English speaking were not assessed or included in the study. Tables 2, 3, and 4 show the number of students involved by handicapping condition and survey grade.

Table 2

READING

Survey Grade

| | 1 | 2 | 3 | 4 | 5 | 6 | Total | % |
|---|---|---|---|---|---|---|---|---|
| 1. EH | 1017 | 1135 | 856 | 431 | 259 | 123 | 3821 | 28.2% |
| 2. EMR | 345 | 140 | 33 | 12 | 2 | 4 | 536 | 4.0% |
| 3. AU | 12 | 6 | 2 | 3 | 0 | 0 | 23 | 0.2% |
| 4. AP | 269 | 201 | 100 | 41 | 22 | 5 | 638 | 4.7% |
| 5. DHH | 191 | 210 | 156 | 65 | 63 | 57 | 742 | 5.5% |
| 6. OHI | 170 | 110 | 117 | 93 | 73 | 59 | 622 | 4.6% |
| 7. MH | 28 | 23 | 7 | 0 | 4 | 1 | 63 | 0.5% |
| 8. VH | 30 | 32 | 33 | 15 | 19 | 12 | 141 | 1.0% |
| SUBTOTAL | 2062 | 1857 | 1304 | 660 | 442 | 261 | 6586 | 48.6% |
| % | 31.3% | 28.2% | 19.8% | 10.0% | 6.7% | 4.0% | | |
| 9. RSP | 378 | 884 | 1340 | 1363 | 1542 | 1448 | 6955 | 51.4% |
| RSP % | 5.4% | 12.7% | 19.3% | 19.6% | 22.2% | 20 8% | | |
| TOTAL | 2440 | 2741 | 2644 | 2023 | 1984 | 1709 | 13541 | 100.0% |
| % | 18.0% | 20.2% | 19.5% | 14.9% | 14.7% | 12.6% | 100.0% | |

TABLE 3

MATHEMATICS

Survey Grade

| | 1 | 2 | 3 | 4 | 5 | 6 | Total | % |
|---|---|---|---|---|---|---|---|---|
| 1. EH | 659 | 1063 | 1140 | 596 | 297 | 120 | 3875 | 28.5% |
| 2. EMR | 309 | 171 | 41 | 12 | 2 | 4 | 539 | 4.0% |
| 3. AU | 6 | 8 | 4 | 4 | 0 | 0 | 22 | 0.2% |
| 4. AP | 221 | 196 | 147 | 53 | 18 | 6 | 641 | 4.7% |
| 5. DHH | 158 | 192 | 151 | 98 | 76 | 79 | 754 | 5.5% |
| 6. OHI | 156 | 112 | 124 | 94 | 69 | 48 | 603 | 4.4% |
| 7. MH | 26 | 25 | 9 | 0 | 4 | 1 | 65 | 0.5% |
| 8. VH | 30 | 19 | 37 | 22 | 17 | 12 | 137 | 1.0% |
| SUBTOTAL | 1565 | 1786 | 1653 | 879 | 483 | 270 | 6636 | 48.8% |
| % | 23.6% | 26.9% | 24.9% | 13.2% | 7.3% | 4.1% | | |
| 9. RSP | 373 | 884 | 1342 | 1360 | 1543 | 1448 | 6950 | 51.2% |
| RSP % | 5.4% | 12.7% | 19.3% | 19.6% | 22.2% | 20.8% | | |
| TOTAL | 1938 | 2670 | 2995 | 2239 | 2026 | 1718 | 13586 | 100.0% |
| % | 14.3% | 19.7% | 22.0% | 16.5% | 14.9% | 12.6% | 100.0% | |

Table 4

COMPOSITION

Survey Grade

| | 1 | 2 | 3 | 4 | 5 | 6 | Total | % |
|---|---|---|---|---|---|---|---|---|
| 1. EH | 920 | 1112 | 871 | 427 | 235 | 114 | 3679 | 27.7% |
| 2. EMR | 324 | 140 | 35 | 9 | 2 | 4 | 514 | 3.9% |
| 3. AU | 8 | 7 | 2 | 3 | 0 | 0 | 20 | 0.2% |
| 4. AP | 248 | 197 | 110 | 41 | 20 | 5 | 621 | 4.7% |
| 5. DHH | 175 | 192 | 151 | 73 | 70 | 63 | 724 | 5.5% |
| 6. OHI | 158 | 111 | 100 | 96 | 72 | 51 | 588 | 4.4% |
| 7. MH | 29 | 22 | 8 | 0 | 34 | 1 | 94 | 0.7% |
| 8. VH | 30 | 26 | 35 | 21 | 16 | 12 | 140 | 1.1% |
| SUBTOTAL | 1892 | 1807 | 1312 | 670 | 449 | 250 | 6380 | 48.1% |
| % | 29.7% | 28.3% | 20.6% | 10.5% | 7.0% | 3.9% | | |
| 9. RSP | 367 | 876 | 1328 | 1355 | 1533 | 1436 | 6895 | 51.9% |
| RSP % | 5.3% | 12.7% | 19.3% | 19.7% | 22.2% | 20.8% | | |
| TOTAL | 2259 | 2683 | 2640 | 2025 | 1982 | 1686 | 13275 | 100.0% |
| % | 17.0% | 20.2% | 19.9% | 15.3% | 14.9% | 12.7% | 100.0% | Results |

Student Placement

The placement configurations reflected in Tables 2-4 are of interest in their own right as an indication of the grade level instructional advancement attained by handicapped students.

For the non-RSP categories, the preponderance of survey activity occurs in grades 1-3. There are three complementary reasons for this pattern. First, the working grade-level of students appears to be about two or three years below their nominal grade level. Thus, students nominally in 4th, 5th or 6th grade are surveyed at grades 1 through 3.

Secondly, only elementary students were surveyed. That is, secondary school special education students were not surveyed. Excluding

students who are nominally in 7th, 8th, or 9th grade severely diminishes the number of students assessed at working grade levels 4, 5, or 6.

Thirdly, the structure of instruction in grades 1 through 3 is different than the structure in grades 4 through 6. Grades 1 through 3 are more focused upon rudimentary skill accomplishments than are grades 4 through 6 which focuses upon more abstract and complex skill sequences and combinations. For example, early reading instruction focuses upon learning how to read while later reading instruction focuses upon reading to extract information and make inferences from text. Early mathematics instruction focuses upon basic facts while later instruction focuses upon more abstract concepts (e.g., fractions, decimals), more complex algorithms (division, multiplication), and applications (e.g., problem solving). Early composition instruction focuses upon producing legible text and simple mechanics (as sentence punctuation, indention) while later instruction focuses upon organization, clarity and originality of expression, etc.

Given that special education students may require more time than regular students to acquire the various skills in reading, mathematics, and composition, it would also follow that it would take even longer for special education students to acquire the grade 4 to 6 skills than the grade 1-3 skills. Consequently, one would expect to have fewer elementary special education students working at acquiring grade 4, 5, and 6 skills. The survey usage patterns in Tables 2, 3, and 4 are consistent with the preceding factors and conjectures.

However, the student survey pattern for RSP students is different. First, the RSP category includes more students (about 7,000) than the eight other categories combined (about 6,000).

Secondly, the bulk of the RSP students are surveyed in grades 3 through 6 and the fewest are surveyed in grades 1 and 2, respectively. The majority of student placement into the RSP begins in grade 3. The elementary teachers (or parents or administrators) are responsible for initiating a special committee action to decide whether or not a particular student is eligible for placement into RSP. Apparently, there is reluctance to initiate such action and make such recommendations for first and second grade students. However, as students enter third and fourth grade and the curriculum increases in complexity, there is less reluctance to make recommendations for and placement into the RSP.

Student Performance

Figures 1a through 6c present the performance patterns of the special education students contrasted with the mainstream pattern. For each handicap condition, results are presented for (a) reading, (b) mathematics, and (c) composition. In each Figure, one line shows the or mainstream average and is labeled "DIST." The other line in each graph shows the performance pattern for the given special education category.

Performance averages are presented only for those categories and grades where 50 or more students were surveyed. Thus, AU, MH, and VH are not included in these Figures. Likewise, only the first two or three grades are included for EMR, AP, DHH, and OHI.

Educationally Handicapped. The EH performance pattern is parallel to and about 8 to 9 points below the mainstream performance pattern. In reading and composition, the EH students hold their own across all six grades relative to the mainstream. However, in Mathematics, the gap tends to widen a little bit in grades 4, 5, and 6.

Educable Mentally Retarded. The EMR pattern illustrates the second largest gap in performance relative to mainstream performance. However, average EMR performance is in the 60 to 70% range for grades 1 and 2. Patterns beyond grade 2 are not shown because less than 50 students were surveyed.

Aphasic. Performance patterns appear to converge with the mainstream patterns at grade 3. However, patterns beyond grade 3 are not shown because less than 50 students were surveyed.

Deaf/Hard of Hearing. Again, performance patterns appear to converge with the mainstream pattern at grade 3. However, patterns beyond grade 3 are not shown because less than 50 students were surveyed.

Orthopedic/Other Health Impaired. The performance pattern looks similar to AP and DHH. Performance appears to converge with the mainstream, particularly for composition, but the patterns are truncated at grade 3 because of the fewer number of students surveyed in grades 4 through 6.

Resource Specialist Program. The pattern illustrates the largest gap in performance relative to mainstream performance. The differential could, however, simply reflect the on-grade assessment policy required of RSP students as opposed to the off-grade assessment occurring in the

other categories. That possibility can be partially examined by looking at the off-grade versus at-grade performance patterns of students in the non-RSP categories. Though students may be assessed off-grade in the first eight categories, it is not mandatory. In fact, substantial numbers of students are assessed at grade level in each category.

Figures 7a through 11c breakdown the performance pattern of each branch into two components. One line in each Figure shows the performance of the students assessed at-grade level and is labeled "AT." The other line shows the performance of students assessed off-grade level and is labeled "OFF." The three rows of numbers across the bottom of each figure show the number of students surveyed AT grade level, the number surveyed OFF grade level, and the average number of years off grade level (AVE. YR.OFF).

In composite, Figure 7a through 11c tell one story. In most cases, surveying off grade level does not appear to correspond much to gain in average performance levels. If this is true for the first eight categories, then it is unlikely that most of the mainstream/RSP performance gap is accounted for by the RSP at-grade assessment policy.

## SUMMARY

Performance of special education students relative to elementary mainstream reading, mathematics, and composition performance is slightly less than but mirrors mainstream performance patterns (Figures 1 through 6). That is, the performance graph for special education students lies below the mainstream performance graph. However, as the mainstream performance graph rises or falls so almost exactly does the performance

graph for each of the special education categories. Further, the difference between special education performance surveyed at grade level corresponds closely to special education performance surveyed off grade level.

We know, as a general matter, that patterns of instructional accomplishments in elementary schooling vary as a function of subject matter structure, instructional practices, and the learning opportunities afforded students. The findings presented indicate that the same set of determinants function for handicapped students in about the same way as for non-handicapped students.

Although the findings indicate that instructional accomplishments vary by learning opportunity and instructional practice rather than by special student characteristics, this is not to contend that "everything is the same" with handicapped and non-handicapped students. But the findings do indicate that the mainstreaming implications of PL 94-142 for educational processes can justifiably be extended to educational performance in reading, mathematics, and composition.

The findings presented have relevance to legal as well as pedagogical considerations in educating handicapped children. Legal discussions of the instructional assessment of handicapped children (McCarthy, 1983) to date have treated graduation and diploma aspects without attention to the substance and nature of the accomplishments represented by the formalities. The findings indicate that substantive mainstream instructional accomplishments of the highest quality need not be ruled out for handicapped students.

FIGURE 1a

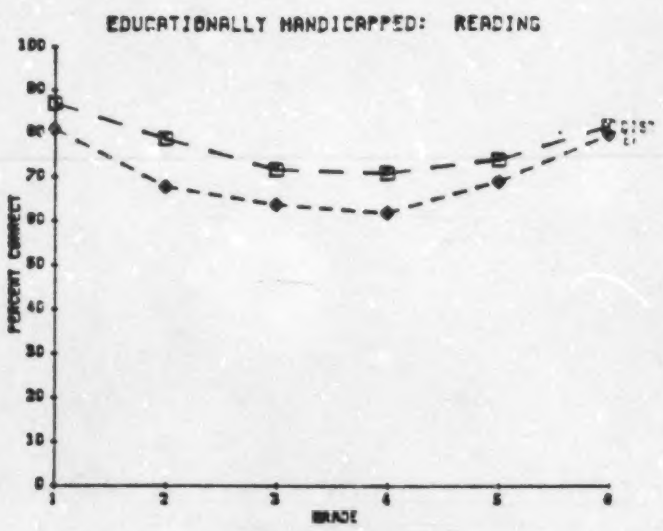



FIGURE 1b

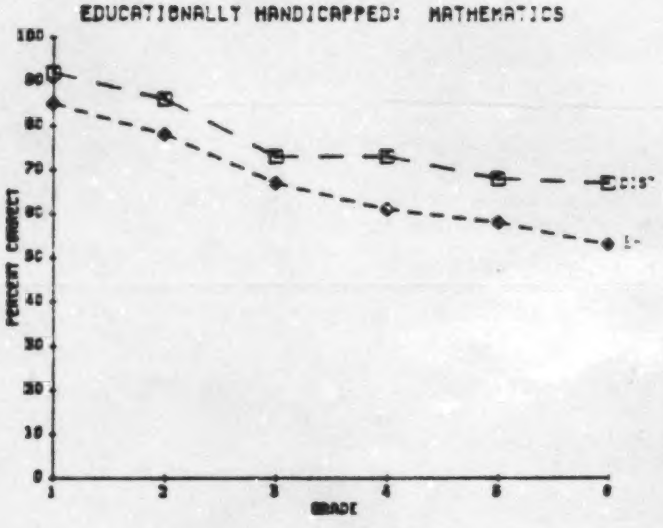



FIGURE 1c

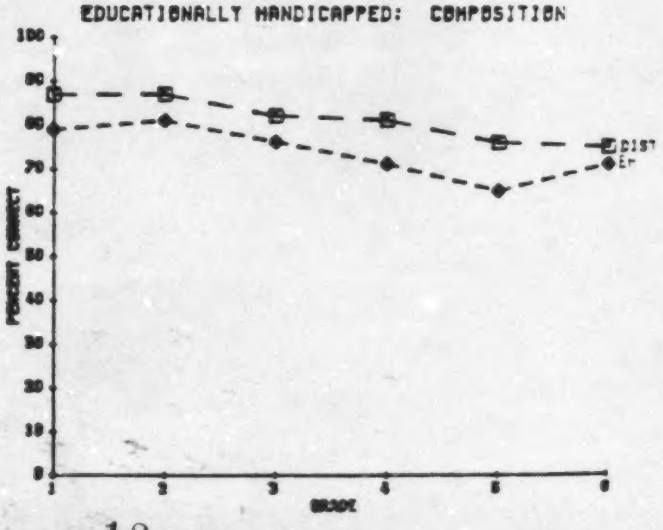


FIGURE 2a

EDUCABLE MENTALLY RETARDED: READING

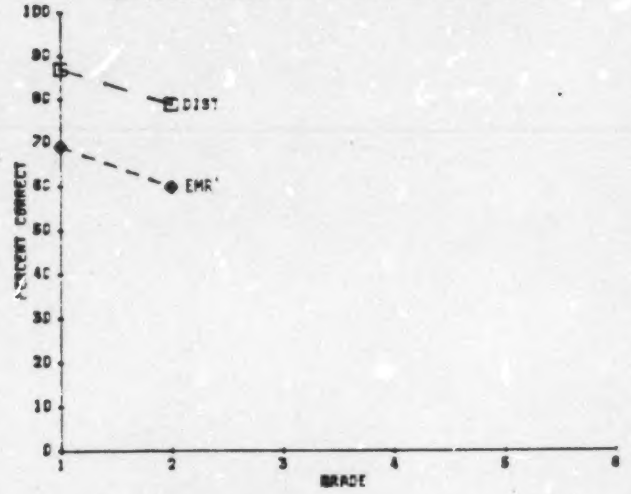



FIGURE 2b

EDUCABLE MENTALLY RETARDED: MATHEMATICS

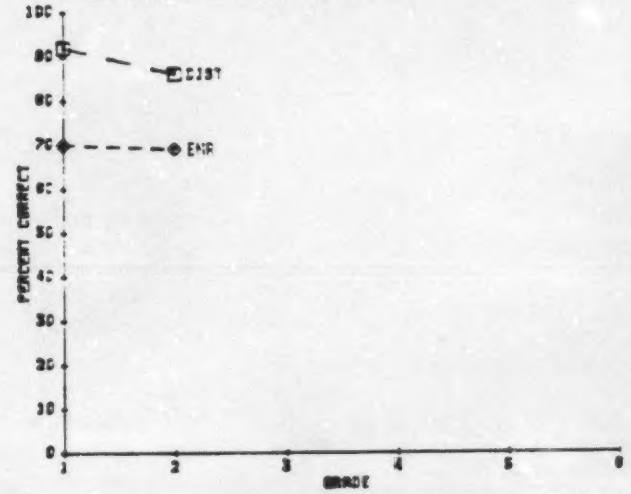



FIGURE 2c

EDUCABLE MENTALLY RETARDED: COMPOSITION

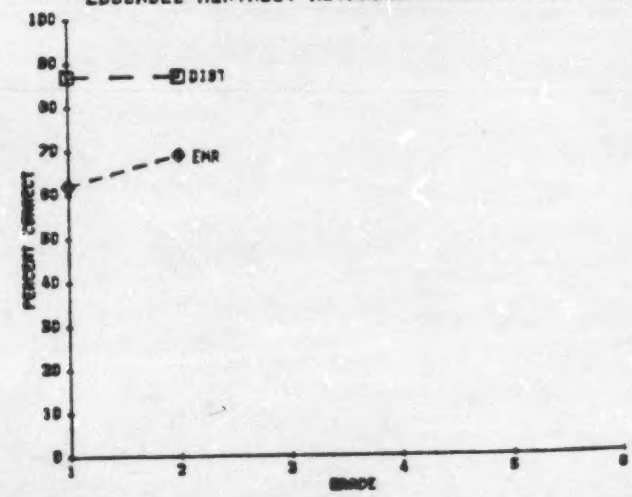


FIGURE 3a

APHASIC: READING

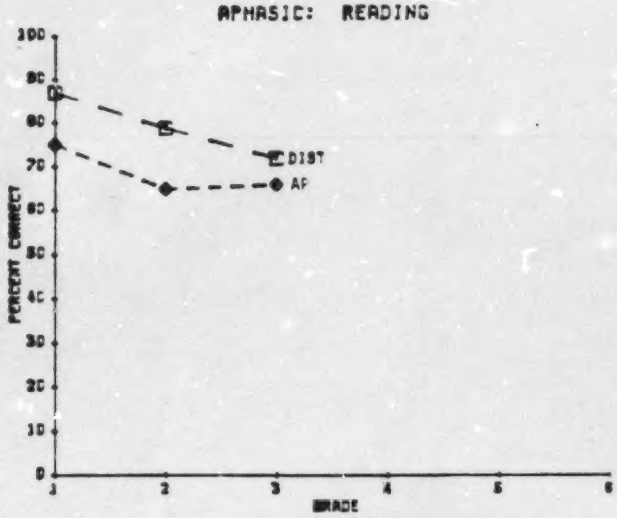



FIGURE 3b

APHASIC: MATHEMATICS

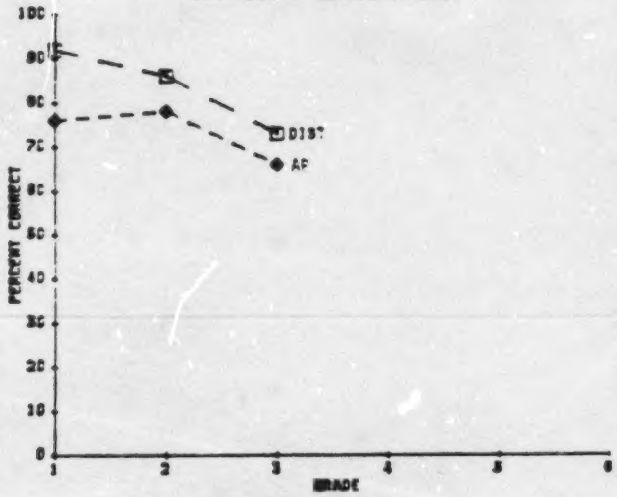



FIGURE 3c

APHASIC: COMPOSITION

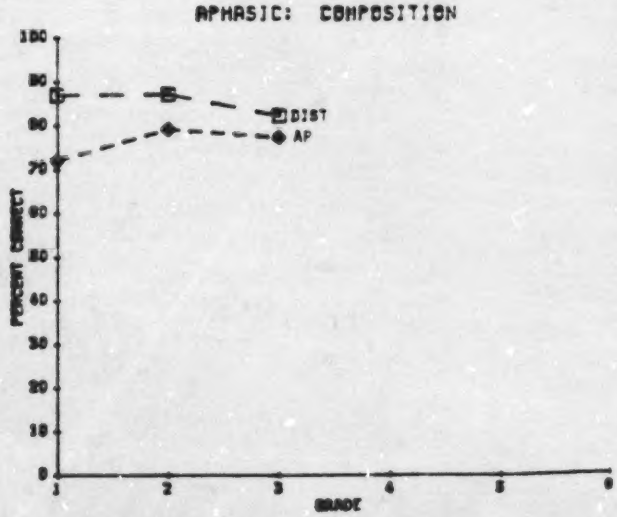


FIGURE 4a

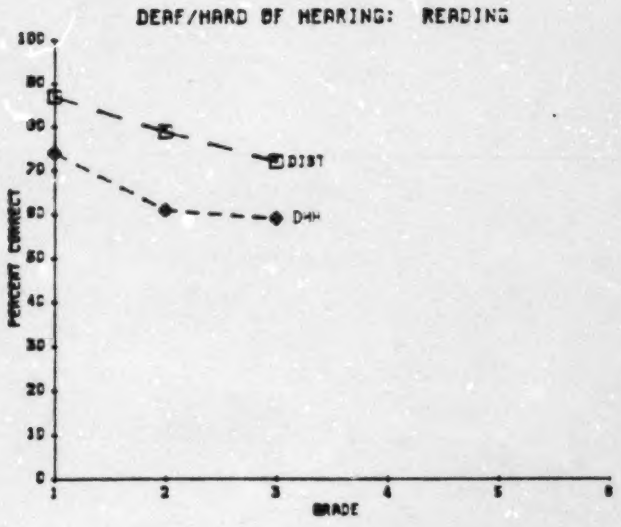



FIGURE 4b

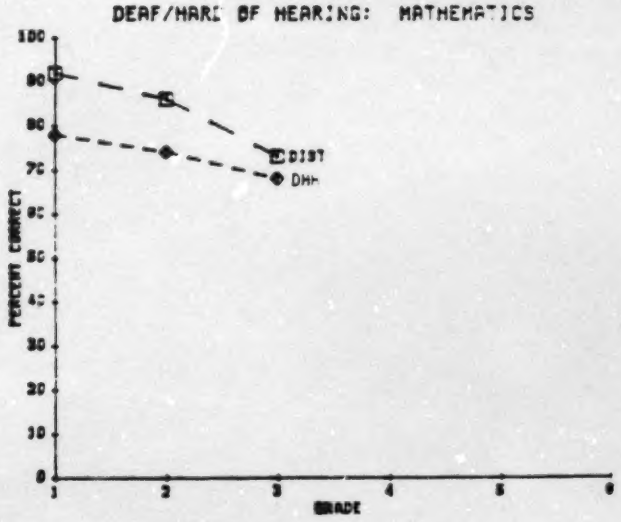



FIGURE 4c

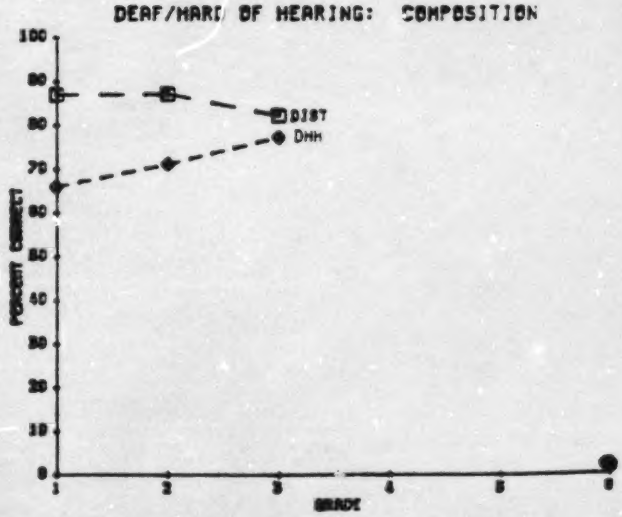


FIGURE 5a

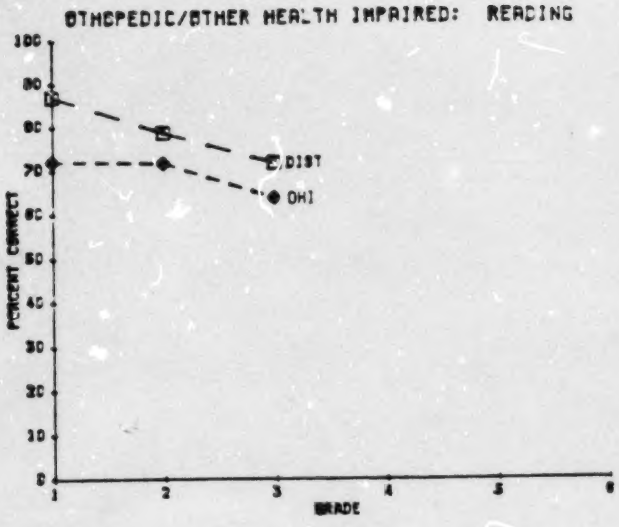



FIGURE 5b

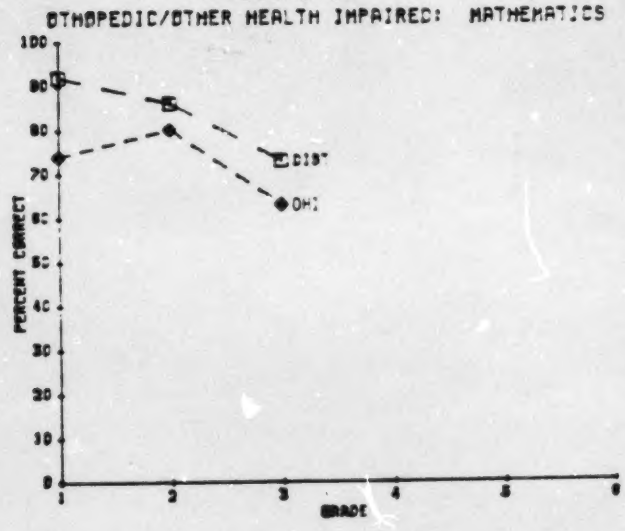



FIGURE 5c

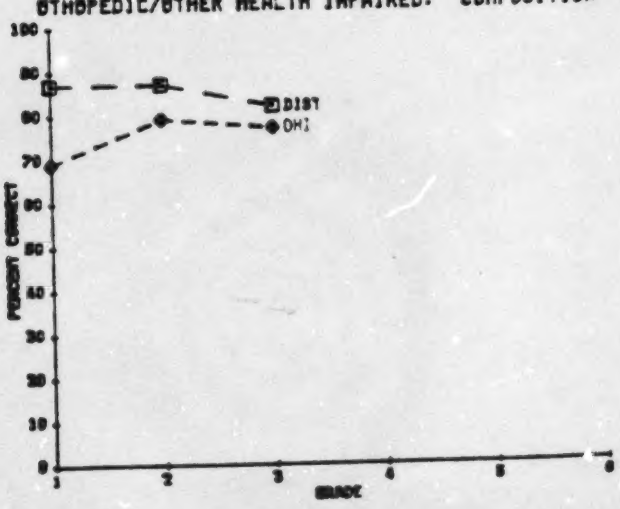


FIGURE 6a

RESOURCE SPECIALIST PROGRAM: READING

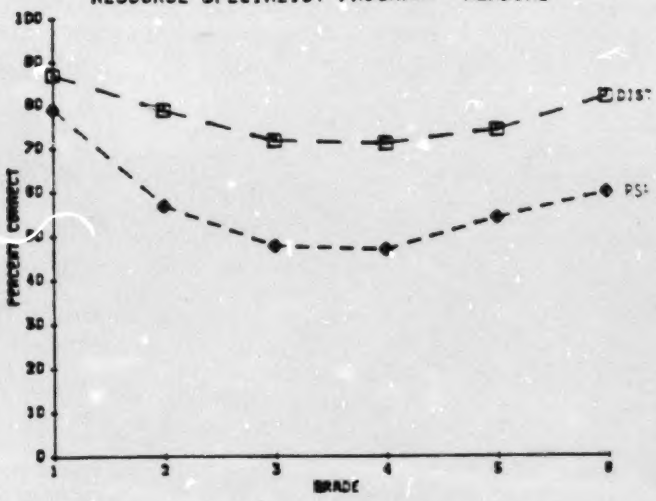



FIGURE 6b

RESOURCE SPECIALIST PROGRAM: MATHEMATICS

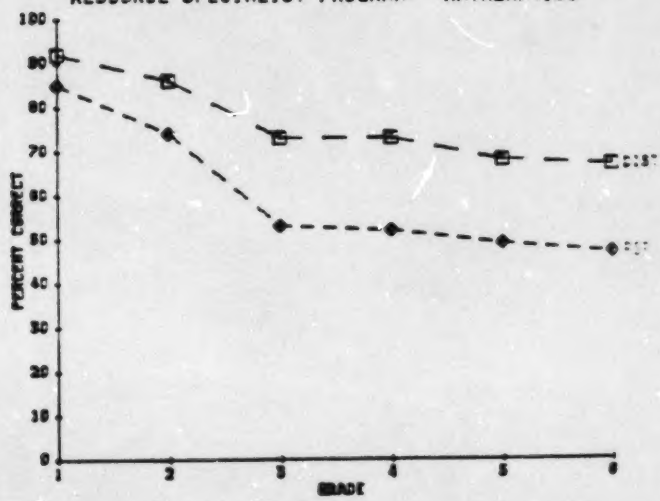



FIGURE 6c

RESOURCE SPECIALIST PROGRAM: COMPOSITION

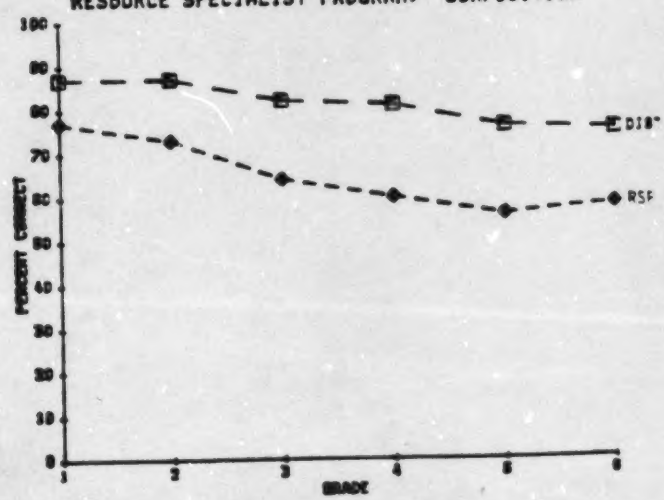


Figure 7a

EDUCATIONALLY HANDICAPPED: READING

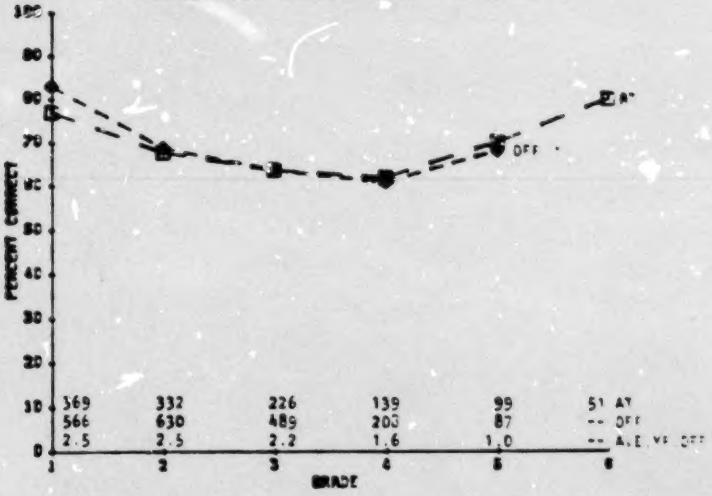



Figure 7b

EDUCATIONALLY HANDICAPPED: MATHEMATICS

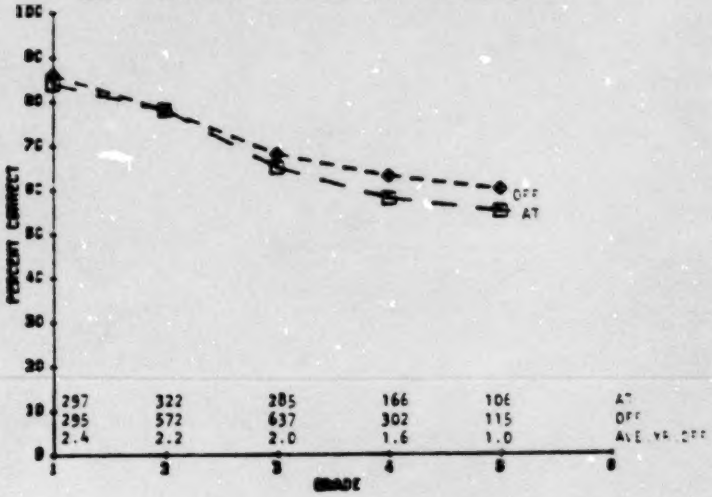



Figure 7c

EDUCATIONALLY HANDICAPPED: COMPOSITION

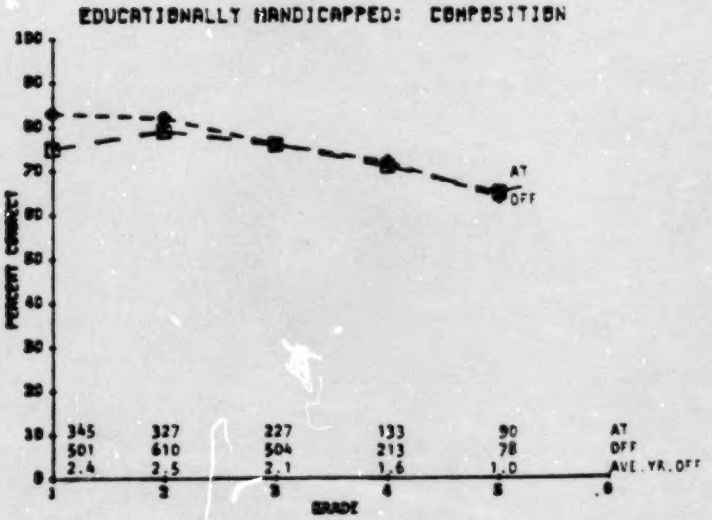


Figure 8a

EDUCABLE MENTALLY RETARDED: READING

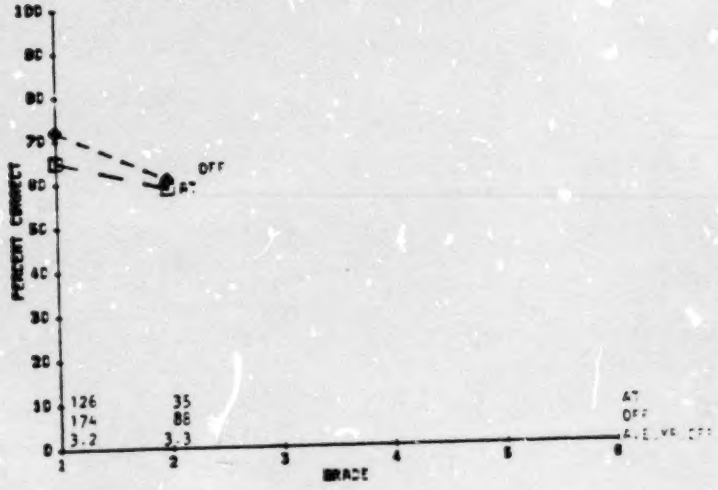



Figure 8b

EDUCABLE MENTALLY RETARDED: MATHEMATICS

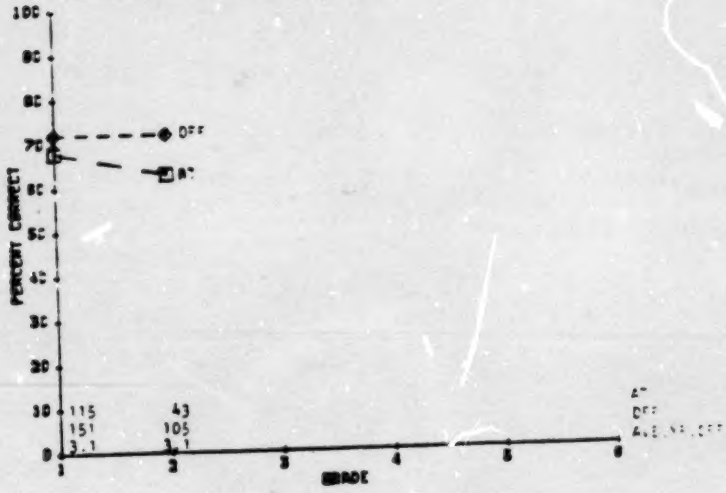



Figure 8c

EDUCABLE MENTALLY RETARDED: COMPOSITION

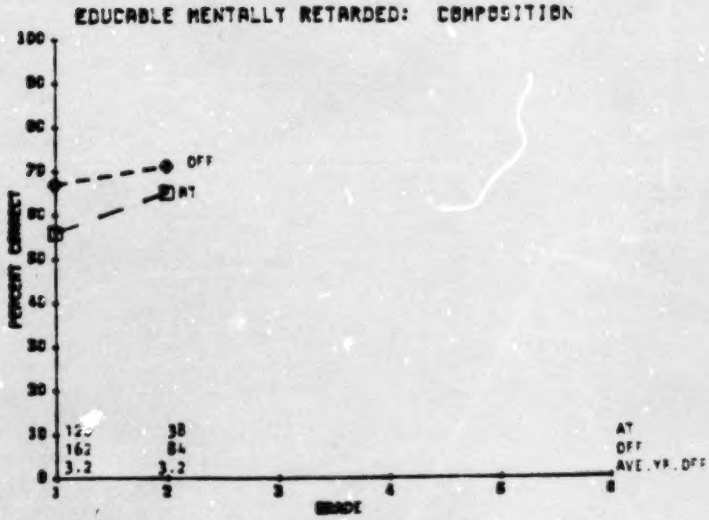


Figure 9a

APHASIC: READING

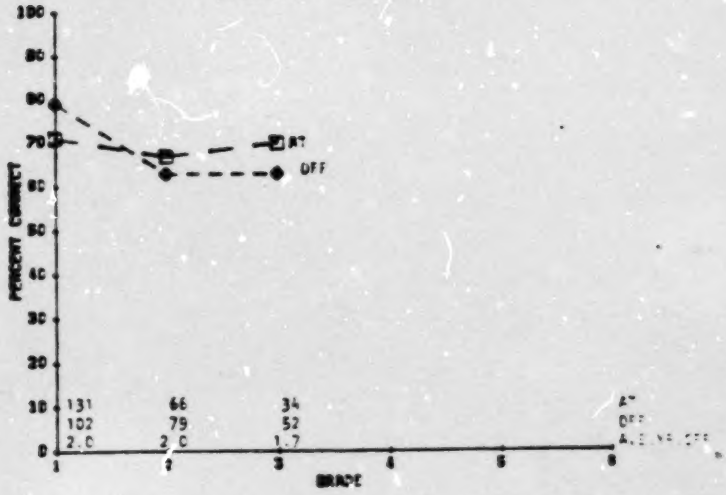



Figure 9b

APHASIC: MATHEMATICS

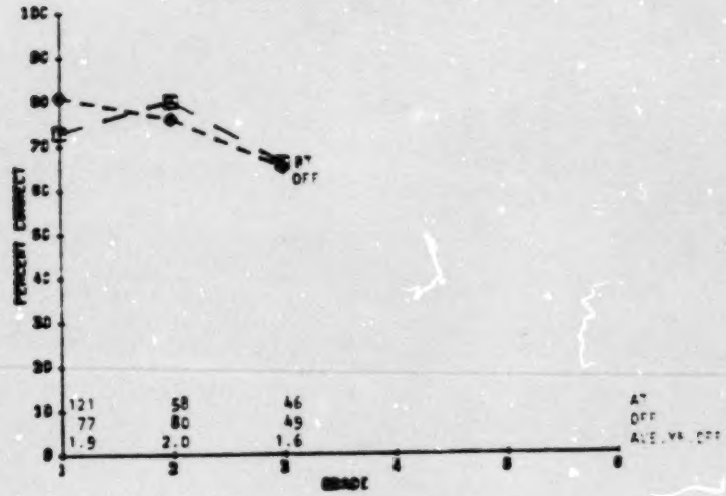



Figure 9c

APHASIC: COMPOSITION

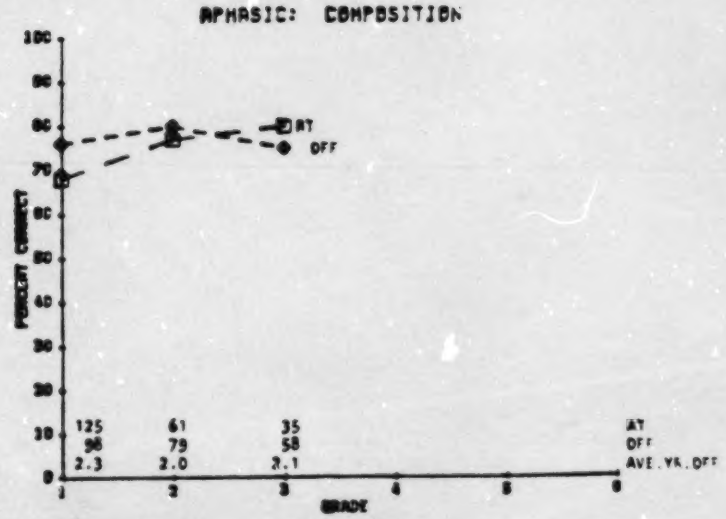


Figure 10a

DEAF/HARD OF HEARING: READING

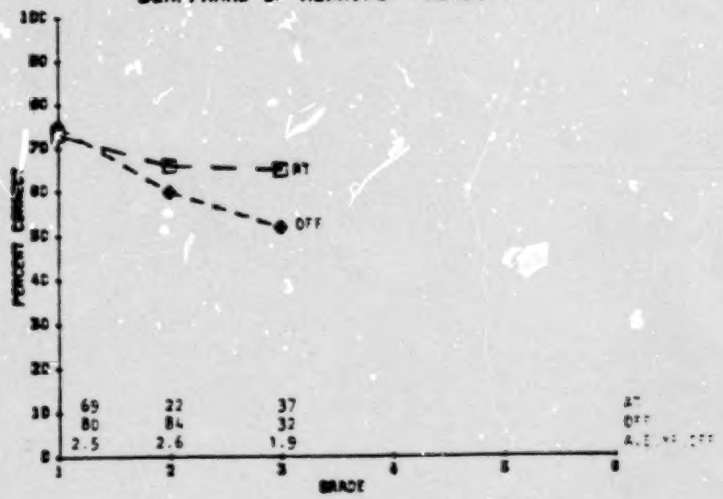



Figure 10b

DEAF/HARD OF HEARING: MATHEMATICS

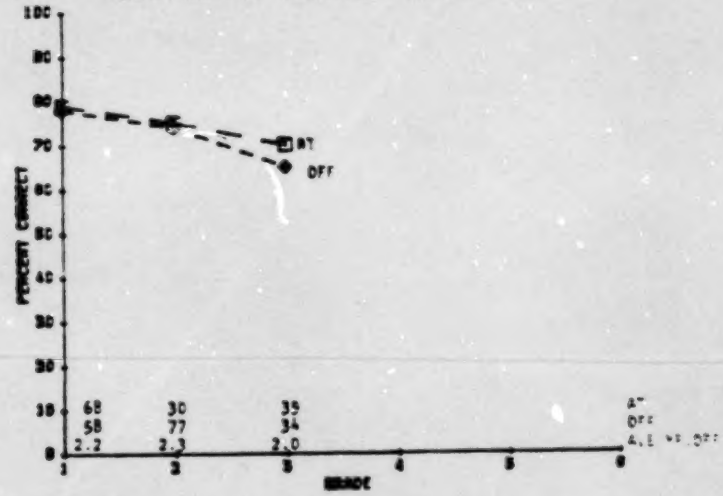



Figure 10c

DEAF/HARD OF HEARING: COMPOSITION

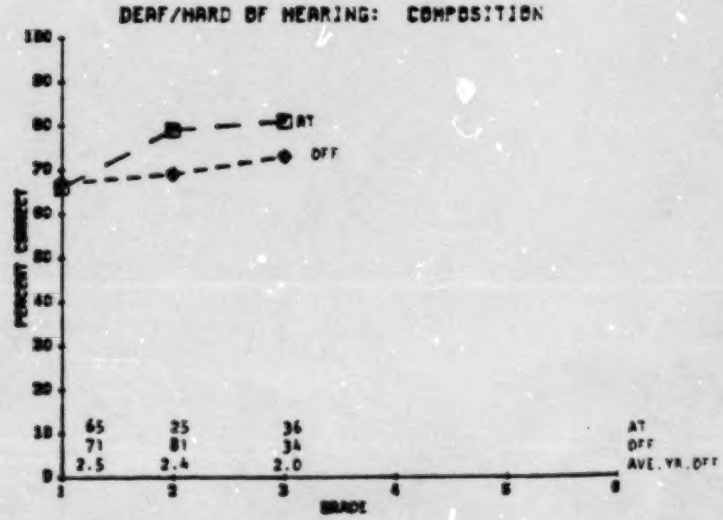


Figure 11a

ORTHOPEDIC/OTHER HEALTH IMPAIRED: READING

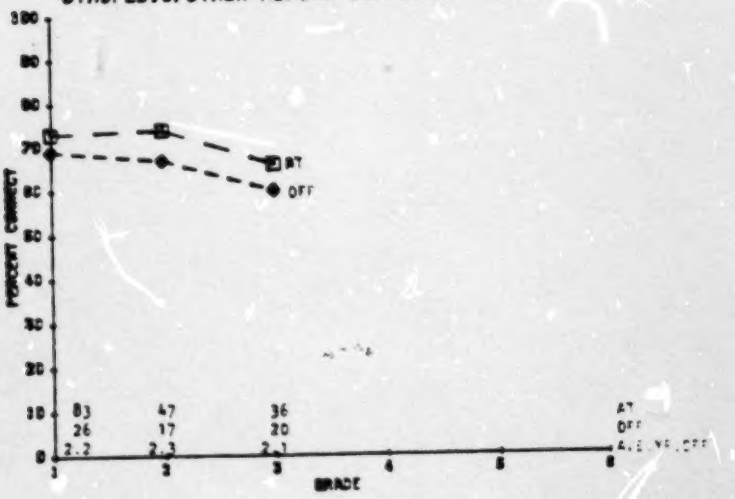



Figure 11b

ORTHOPEDIC/OTHER HEALTH IMPAIRED: MATHEMATICS

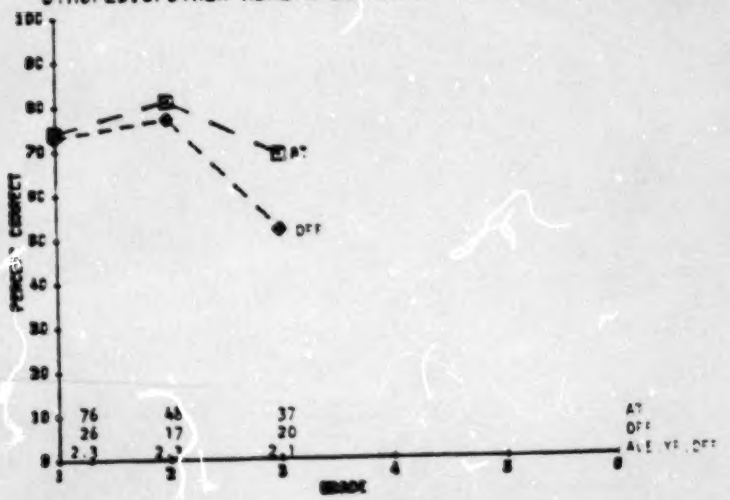
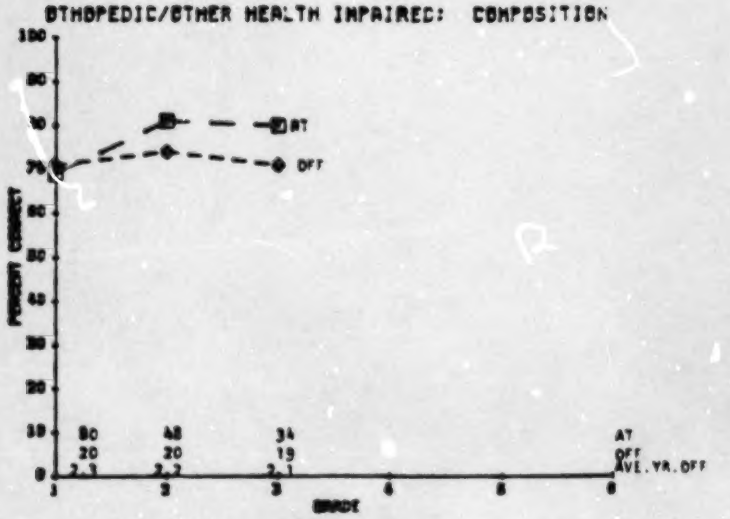



Figure 11c

ORTHOPEDIC/OTHER HEALTH IMPAIRED: COMPOSITION



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